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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SMITH, GAMBRELL & RUSSELL, LLP
ATTORNEY AT LAW
1850 M STREET, N.W., SUITE 800
WASHINGTON, DC 20036

EXAMINER

METZMAIER, DANIEL S

ART UNIT

PAPER NUMBER

1712

9

DATE MAILED: 11/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

09/893,513

Examiner

Daniel S. Metzmaier

Applicant(s)

MUROTA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/29 & 12/11/2001; 10/24 & 11/13/2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 3-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 & 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claims 1-11 are pending. The Information Disclosure Statement filed December 11, 2001 and November 13, 2002 have been entered as Paper No. 4 and 8, respectively. The amendment, election, and priority papers filed October 24, 2002 have been entered as Paper No. 7. New claims 10 and 11 have been added by the amendment filed October 24, 2002, paper No. 7.

Election/Restrictions

1. Applicant's election of the restriction and election of species in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 3-9 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7. It is noted that the examiner further required in the event that applicants elect Group I, an election of species between a dispersion and a ink jet recording medium. The species election has been collapsed and/or withdrawn. Claims 1-2 and 10-11 read on the elected Group I. Claim 1 sets forth in the preamble an "intended use" language and/or clause. This is not deemed an alternate species but merely a preferred and/or intended use of the dispersion compositions.

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Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

The post office address of Inventor Masahide Arai has been changed.

Drawings

4. The corrected or substitute drawings were received on June 29, 2001, Paper No. 5. These drawings are acceptable to the examiner.

Claim interpretation

5. Claim 1 employs an "intended use" clause in the preamble of the claim. Applicants are directed to MPEP 2111.02 regarding the weight given to "intended use" recited in the preamble. In the instant case, the claim recited structural limitations defining the particle size and distribution of the dispersed phase and the viscosity of the overall composition. Since said composition would have been useful as a coating as such, the intended use recited is given little or no patentable weight.

Claim 11 sets forth product-by-process limitations for the claimed dispersions of claim 1. It is pointed out to applicants that product claims are examined based on the products that are claimed. The process, which the products are made are given weight only to the extent said process limitations impart structure to the products claimed. See

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MPEP 2113. In the instant claims, the products structurally defined by particle size and particle size distribution and viscosity.

Claim Objections

6. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Figure 1 is a bell curve representing a statistical distribution having particle size as the x-axis and particle count as the y-axis. Since the figure does not quantify either the particle size and/or the particle count, it is unclear how said figure is further limiting than the description of a "distribution curve" set forth in claim 1.

Furthermore, the following citation set forth in MPEP 2173.05(s) should be considered regarding claim 2:

"Where possible, claims are to be complete in themselves. Incorporation by reference to a specific figure or table 'is permitted only in exceptional circumstances where there is no practical way to define the invention in words and where it is more concise to incorporate by reference than duplicating a drawing or table into the claim. Incorporation by reference is a necessity doctrine, not for applicant's convenience.'"

If applicants are of the opinion that claim 2 meets the criteria regarding an incorporation of figure 1 by reference, applicants should indicate what circumstances there is no practical way to define the invention in words.

7. Claims 1-4 are objected to because of the following informalities: as the claim is drafted, it appears the viscosity is measured by a laser diffraction particle size

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distribution measurement apparatus rather than the nanoparticle ceramic agglomerate average diameter is measured by said apparatus. The remaining claims include the above issue.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-2 and 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The viscosity does not define the parameters such as temperature and shear rate that the viscosity was measured. Since the viscosity will vary over a range of temperatures and/or shear rates, said parameters should be set forth in the claim to meaningfully quantify the claimed viscosity limitation.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-2 and 10-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cabot Corporation (hereafter Cabot), WO 00/01539. Cabot discloses (abstract, examples and claims) coating compositions for use in recording mediums. Cabot (page 8, lines 8 et seq) discloses the metal oxides employed in the compositions. Cabot discloses (page 11, lines 4 et seq) a first group of particles that are agglomerated particles having a preferred mean diameter of about 0.07 to 0.3 μm (0.07 to 0.3 μm equates to 70 to 300 nanometers (nm)) and a preferred particle size distribution (page 11, line 33 to page 12, line 9) that is very narrow.

Cabot further discloses (page 19, line 36 to page 20, line 20 and Tables 1 and 2) the coating compositions employing the dispersed metal oxide nanoparticle aggregates

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have a viscosity at a relatively high shear rate in the range of less than 100 centipoise at 22°C. A viscosity of 1.0 centipoise = 1.0 mPa.s.

The ranges claimed for particle size¹, particle size distribution and viscosity substantially overlap and would have been expected to have been inherent to and read on the claimed ranges. See MPEP 2131.03. The ranges are deemed anticipated since they are taught with sufficient specificity.

See also MPEP 2112.02, wherein when the structure recited in the reference is substantially identical to that of the claims, the claimed properties are presumed to be inherent. To the extent the Cabot reference incorporates a second group of particles not set forth in the instant claims, the claims employ open language, *i.e.*, comprising, that is open to the incorporations of other materials. The Cabot reference discloses compositions that are taught for the same purpose as those instantly claimed and the incorporation of further ingredients as disclosed in the Cabot reference is not precluded from the claimed compositions. Furthermore, claims 1 and 2 explicitly define the agglomerated dispersion particle distribution rather than the all the particles in the compositions.

To the extent the claims were to define the particle distribution of all the ceramic nanoparticles in the composition, Cabot (comparative examples) anticipates the compositions since the compositions are made with agglomerated particles in the absence of the second group of particles and having (tables 1 and 2) viscosities in the range claimed.

To the extent the Cabot reference differs in the particular properties of viscosity, particle size, and/or particle size distribution as claimed, some variation would have been expected for a particular coating composition. Since all the ranges defining the physical properties of the claim overlap and/or are generally taught in the Cabot reference, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to vary the compositions for the advantages taught in the Cabot reference of appearance, gloss, ink absorption and image smear resistance.

To the extent the further incorporation of the second group of particles is interpreted as a ceramic particle for the purpose of defining the particle size distribution, said interpretation does not distinguish the claims under anticipation or obviousness. Initially, comparative examples show the claimed compositions. Also, the second group of particles is not agglomerates as set forth in the claims. Lastly, the Cabot reference (page 16, lines 3-20) does not require the second group of particles to be metal oxides, *i.e.*, ceramic, by the inclusion of polyolefins, plastics, urea resins and melamine resins as second group of particles. These are not ceramic particles. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ the organic polymer materials as the second group of particles.

Regarding the process limitations of claim 11, product-by-process claims are not limited to the steps recited in the claims. Product-by-process claims are limited only by the structure implied by the steps recited. In the instant case, the steps recited are to

¹ The particle size disclosed is characterized as a mean particle size rather than the claimed average diameter. The mean is synonymous with the average.

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give a narrow particle size distribution, which the prior art teaches as the desired form of the products.

14. Claims 1-2 and 10-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Liu et al, 5,958,168. Liu et al (examples) discloses coating compositions for ink receiving coatings. Liu et al discloses particles substantially identical to those claimed that are pulverized by a high pressure homogenizer. The physical properties as claimed would have been inherent to the compositions of the Liu et al reference based on the substantially identical characterization of the compositions for the same utility and the instant invention.

To the extent the viscosity and/or the particle size distribution disclosed in the Liu et al reference differs from the claims, some variation would have been expected for a particular coating composition. Since all the ranges defining the physical properties of the claim overlap and/or are generally taught in the Liu et al reference, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the compositions for the advantages taught in the Liu et al reference of appearance, gloss, ink absorption and image smear resistance.

Regarding the process limitations of claim 11, product-by-process claims are not limited to the steps recited in the claims. Product-by-process claims are limited only by the structure implied by the steps recited. In the instant case, the steps recited are to give a narrow particle size distribution, which the prior art teaches as the desired form of the products.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining references cited in the International search report as X references would be considered cumulative to the above rejections since some agglomeration is expected to exist in inorganic sols and the claims do not specifically quantify the degree of agglomeration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM
November 20, 2002